

**Mathematics**

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| What A2 content has already been covered in Year 12? | A2 Pure Maths Chapter 1 – Rational functions, partial fractions & proof by contradiction  A2 Pure Maths Chapter 4 – Binomial expansion  A2 Pure Maths Chapter 5 – Radians: arcs & sectors; trig equations; small angle approximation |
| What assessments will there be in September of Year 13? | If you missed any of the topic tests for the Y2 Pure Chapters 1, 4 & 5 you will need to complete these using your study periods in the first week back in September  Most Y13 students will only sit a Pure paper 1 (based on Y1 content) in the September mocks but you can choose to also sit a Statistics & Mechanics exam if you were very disappointed by your June results |
| Summer Maths study checklist | * Finish **corrections for all mock papers** & review against model solutions * Update, review and organise your **assessment folder**, including updating the summary checklist. Note this summary sheet should have a record of your practice papers and exams too. * Check you have finished all of the Y2 Pure Chapter 1, Chapter 4 and Chapter 5 textbook exercises & the review homeworks. Follow up with the recommended **development tasks** for these chapters as appropriate. * Consider if you need to revisit any of the Y1 topic chapters for more practice. * Do at least 1 Pure practice AS paper to prepare for the September exams *(this might be the practice paper at the end of the Y1 textbooks if you have not completed these before or see Student resources \Maths\A level Mathematics Edexcel\AS Mathematics practice papers)* * Watch and enjoy the 20 minute TLMaths video[*CURRENT SPEC A-Level* ***Maths Graphs YOU MUST KNOW HOW TO SKETCH!***](https://www.youtube.com/watch?v=vd714NIXZd4) (see teams/e-mail for a direct video link) * Complete the Large data set ***Investigation 3 – Sampling methods*** from Student resources (you also need the ***Dates*** spreadsheet in this folder) * Watch and enjoy the 15 minute Exam Solutions video:[***Connected particles****: Greatest height reached by a particle when the other hits the ground*](https://www.youtube.com/watch?v=uP7RBWsoQ44)(see teams/e-mail for a direct video link) |
| What additional independent study can I complete in order to further stretch my subject knowledge and curiosity? | Use Desmos or Geogebra to ***investigate the Modulus function*** – this file is in Student share, Y2 Core Chapter 2 Functions, problem solving folder (this topic is studied in Sept. year 13)  See some further interesting mathematical problems to explore at the links below:  <https://undergroundmathematics.org/thinking-about-functions/thats-odd-or-even>  <https://undergroundmathematics.org/polynomials/general-tragedy>  <https://undergroundmathematics.org/calculus-meets-functions/curvy-cubics> |
| How will Year 13 in **Maths** be different to Year 12? | The routines of successful mathematical study at A level should now be established and most new learning builds on year 12 work. The level of challenge in calculus and trigonometry builds significantly, often drawing on multiple techniques within any given problem. The challenging topic in statistics is the normal distribution. In mechanics the big step up is working with moments, projectiles and with inclined planes.  We do not intend to make many changes to your maths groups, except to move a few students from the larger A block classes into E block to balance out the group sizes. Groups should expect some changes to their teachers. Ms Barr, Miss Garton, Ms Jones, Mr Ledger, Mrs Morgan, Dr Stoker & Mr Williams to all be teaching Y13 Maths.  You have given us some really helpful feedback in our recent questionnaire – we will be trying to implement some of your suggested improvements.  There will be some targeted period 6 maths intervention sessions running for year 13 students |
| What do I need to do that I wasn’t doing in Year 12? | From early on in year 13 you need to start completing p**ast exam papers** out of lesson time. The most demanding element of exam success is building confidence in selecting the mathematics to use, solving any particular problem. Initially students need to progress through working on past exam papers that are pitched at AS content. As with all maths, it is important to focus as much on the marking phase as solving the problems. Fully detailed exam solutions can be easily accessed online but you must learn to avoid turning to a ready-made solution before exhausting strategies that you can use to move towards solving a problem yourself – understanding someone else’s solution has far less impact on your learning than solving it for yourself.  We make a particular point of building your experience with ***Modelling and Problem solving*** as students may find that even with confident mastery of the mathematical techniques being learned, the context included in a question can lead to underperformance in exams.  Take up the opportunities for **support** on offer: check your frees against any drop-in sessions, plan to attend intervention sessions, use the quiet study spaces in the villa to make best use of your study periods.  We have created a **Maths Club** in Teams to make student to student support easier to access outside of lessons. Posting here can enable the chance to find another student who will help you with something you are struggling with. You can also share files and online links if you find a really useful resource that you would recommend to others. We intend to set a weekly meet time & venue too.  Take every opportunity to talk maths with your fellow students and teachers – explaining a mathematical idea is one of the best ways of learning it! Never leave a problem unresolved. The hard work starts straight away.  **Good luck!** |

WITH GREAT FOUNDTIONS YOU CAN LOOK FORWARD TO A SUCCESSFUL YEAR 13

